

phone number. The static database may also contain other information such as preapproved alternate delivery points, hold mail status, instructions for delivery times, common misspellings of recipients' names, etc. In short, the static database contains anything of a 'permanent' nature about the recipient, as contrasted to the 'temporary' information about mail item 100, which is no longer useful after mail item 100 is delivered. While static in nature this database may be regularly updated under secure conditions.

[027] Using a static, predefined database to store notification contact information adds a fraud protection factor to the invention. Since the notification information prelinks a physical mailbox to a notification channel, such as an electronic mailbox or electronic address, the intended recipient is notified of any fraudulent redirection of mail item 100 to a new address. Moreover, if the 'recipient' instructions do not come from a predefined notification path for the recipient, as stored in the static database, they can be ignored as presumably fraudulent. Furthermore, in one embodiment, a recipient may only change delivery points to an address that is pre-recorded in the static database.

[028] PROCESS OVERVIEW

[029] Figure 2 is a flow chart of an exemplary process for flexible delivery of a mail item consistent with the principles of the present invention. In stage 205 of the embodiment shown, the process starts by capturing an image of the mail item being delivered, e.g., mail item 100. For example, the image may include delivery address and return address information. In addition, or as an alternative, the process may also capture data that contains the same type of information (e.g., the

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destination address and return address), which is supplied by the sender (e.g., a mailer).

[030] In one embodiment, the image is captured by a conventional optical character reading apparatus (OCR), which takes an image of mail item 100 and "reads" the letters of the recipient's address and the sender's return address, converting them into electronic data usable by a data processing system. Various types of optical character reading apparatus are known to those skilled in the art, and thus need not be described in detail here. In another embodiment, the recipient's address and the sender's address information is supplied by the sender as electronic data, obviating the need to use an optical character reader to get the information off mail item 100.

[031] Sender supplied data may also include other information about mail item 100, such as the parcel's size and weight of the mail item, the contents of the mail item, its expiration date, undeliverability instructions, etc. Alternatively, some or all of the same data may also be captured independently of the sender in a manner similar to an OCR capturing the address information, for example, by weighing and measuring mail item 100 to determine its weight and size.

[032] Next, the process determines the delivery point from the image of mail item 100 and/or from the mailer supplied data (stage 210). In one embodiment, as is well known in the art, an OCR reads the characters of the delivery address on mail item 100 to determine the delivery point. The "delivery point" may include the recipient's name as well the recipient's address. The delivery point may then be transformed into a bar code, such as a POSTNET bar code containing the Zip-plus-

four-plus-two recipient delivery point code, which is applied to the front of mail item 100 and used for further sorting. In another embodiment, has a unique, easy-to-determine identifier attached to it, (for example, an identifier bar code) and the delivery point is determined by looking it up in a database indexed by the identifier. The identifier and the corresponding database of information associated with the identifier may be supplied by the sender, because a database lookup to determine the delivery point is typically faster, easier to determine, and less error-prone than an OCR process.

[033] In one embodiment, an OCR process is used just once to determine the delivery point, which is stored in a database with a unique identifier. Then, the same unique identifier is applied to mail item 100 in a fashion that makes the identifier easy to determine in subsequent tracking, removing the need for another pass through an OCR process. For example, a barcode may be applied directly to the mail item.

[034] In stage 215 of the process, a notification is sent, e.g., to the recipient, to indicate that mail item 100 is en route to the delivery point. The notification may be sent by various ways, for example, via email, via telephone, via fax, or via pager. The notification may be sent to a wide variety of individuals or organizations. For example, the notification may be sent to the recipient and/or an individual authorized by the recipient. In addition, the notification may be sent to the sender or the mailer.

[035] In one embodiment, the notification is sent to the recipient and the information necessary to contact the recipient (e.g., the recipient's email address or

FOOTNOTES